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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

ROBERTSON, D

ART UNIT

PAPER NUMBER

2752

7

DATE MAILED: 01/06/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action

## —The MAILING DATE—

### Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE  
MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response must be filed within the specified period.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) months from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to be abandoned.

### Status

- ☒ Responsive to communication(s) filed on 12/3/98
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- ☒ Claim(s) 1-29 is/are pending in the application.
- Of the above claim(s) 12-19 & 26-29 is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-11 & 20-25 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_.

### Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of References Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

### Office Action Summary

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This action is in response to the election of Group I. Accordingly, only claims 1-11 and 20-25 will be examined on the merits.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The reference on page 2, line 12 to "Figure 5" is not understood.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(e) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants' admitted prior art or, alternatively, Terada *et al* (5,561,628). Applicants admit that it was known to include a status register in a memory device, including one wherein the status register includes at least one bit to indicate the suspension of an erase operation, namely ESS. The Terada reference also teaches the status registers. Further, applicants discuss the relative time requirements for erase operations, programming (writing) operations and reading operations. These timings were also well known in the art. At the time of the Terada application (1994), popular microprocessor speeds were on the order of 90-100 MHZ. Recently, microprocessor

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speeds of 450 MHZ have been announced. The faster the processor, the greater the adverse impact of a fixed delay, such as the latency for a flash memory write. At 450 MHZ, a fixed latency impacts about 4½ times as many clock cycles as it did at 100 MHZ. Therefore, in view of the continually increasing processor speeds, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to have provided for means to suspend the programming of a flash memory to service other requests because of the tremendous impact that latency would have on the more recent processors and the applications running on those processors. It appears that the other claimed elements to support the write operation suspend status bit are equivalent to the support elements required for support of the prior art ESS bit, and it would therefore have been obvious to include such support elements.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 308-9051, (for formal communications intended for entry)

**Or:**

(703) 308-6606 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the technology center receptionist whose telephone number is **(703) 305-9600**.

Direct any inquiries concerning drawing review to the Drawing Review Branch (703) 305-8404.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Robertson whose telephone number is (703) 305-3825. The examiner can normally be reached Monday through Friday from 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca, can be reached at (703) 308-3116. The fax number for this technology center is (703) 305-9564. **The fax number for art unit 2572 is 308-6606.**

Communications which are not application specific may also be posted on e-mail at *David.Robertson@USPTO.gov*.



DAVID L. ROBERTSON  
PRIMARY EXAMINER  
ART UNIT 2572